

# Skinny Peach Trees

These sweet, plump  
peaches grew on  
columnar, or pillar, peach  
trees (background),  
which stay about 5 feet in  
diameter when fully  
grown.





**I**magine plucking sweet, juicy peaches from a tree that fits neatly in a tiny townhouse yard. That'll be a real possibility in a few years, when the progeny from Ralph Scorza's new peach trees go on sale at your local nursery. These unique, space-saving forms could have an important impact on the ornamental and home garden market, says Scorza, a horticulturist at ARS' Appalachian Fruit Research Station in Kearneysville, West Virginia.

Commercial peach growers should reap even more benefit from his columnar—or "pillar"—peach that maintains a diameter of about 5 feet, fully grown. The trees can be planted much closer together than conventional trees, which branch out to 16 feet across. That translates into many more peaches per acre, while land and production costs remain about the same. According to one estimate, grower profits could increase by 20 to 50 percent.

"Many growers have hit the wall on maximizing peach production with conventional trees," says Wanda Heuser Gale, an executive with International Plant Management in Lawrence, Michigan. "They can't get production high enough to make it profitable. That's why we're so excited about this new peach."

Another advantage of high-density planting: growers may get a profitable crop the second year after planting, when the pickings would be too slim in a conventional orchard to make harvesting worthwhile, says Scorza.

For growers who may not be ready for such a radical change, Scorza also bred an "upright" tree that reaches 8 to 10 feet across. "We wanted to release two different forms to give growers a

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**Horticulturist Ralph Scorza inspects a peach on one of his newly developed columnar trees.**

choice," he says, noting that the cash outlay to buy so many columnar trees may be a stretch for some growers. Left unpruned, both new trees reach a height of 12 to 15 feet after several years.

Both columnar and upright forms are undergoing field evaluations at the West Virginia station and in 11 other states—from New York to Texas to Washington—plus 3 foreign countries. Greg Reighard, a professor of horticulture at Clemson University in South Carolina, is in his third year of evaluating pruning and training systems aimed at producing a "wall" of fruit to increase efficiency.

"It's their form and rapid growth that make these trees unique. We want to take these two traits and find a system that will maximize fruit production and minimize cost," says Reighard. "They grow very quickly here in South Carolina, so you're able to harvest a year earlier." His second-year harvest produced between 12 and 25 pounds per tree from both tree forms.

Because their forms are so different, ARS has filed a patent application on both. Scorza plans to involve commercial interests that will assess training methods from the growers' standpoint and instruct nurseries on how to grow and market the trees.

### **Parents Make the Difference**

Scorza says high-density orchards have revolutionized apple production worldwide. In the United States, per-acre apple production is about twice that of peaches. Unlike apples, however, there are no suitable rootstocks for dwarfing peach trees. So he looked for alternative solutions.

Around 12 years ago, while looking through the collection of a U.S. breeder, Scorza located a Japanese ornamental peach tree having a columnar shape but fruit too small to sink your teeth into. Later he found additional columnar tree germplasm. Through conventional breeding with commercial cultivars, Scorza produced both the columnar and upright tree forms and coaxed both forms to produce higher quality fruits that flesh out to 2.75 inches in diameter. Plus they are more productive than the parents.

The columnar form has two copies of the gene that sends the branches skyward, Scorza says, while the upright has only one copy. But both selections produce yellow-fleshed, dessert-type peaches with smooth, melting flesh that is sweet and aromatic. They are firm fleshed, store well, and soften when completely ripe.—

**By Judy McBride, ARS.**

*This research is part of Plant, Microbial, and Insect Genetic Resources, Genomics, and Genetic Improvement, an ARS National Program (#301) described on the World Wide Web at <http://www.nps.ars.usda.gov>.*

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